Literature review of the relationship between E-procurement and cost reduction

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Abstract The purpose of this desktop study was to examine the efficacy of e-government technologies and the obstacles to their efficient use. The researchers assessed how well e-government affected service delivery, how it might result in cost savings and the advantages and difficulties of adopting and using it. The study also looked at the advantages of using e-government to investigate this. E-efficiency in providing services was demonstrated by greater citizen involvement and interaction with the local government, increased openness and accountability, and cost savings. The study revealed that the use of e-government improves traditional methods of conducting business and providing services while also enabling access to information and services online, reducing the need for rework, increasing transparency and accountability, and encouraging citizen participation. The ineffective use of e-government in local authorities was hampered by a lack of funding, inadequate enabling infrastructure, low ICT literacy levels, and the digital divide, among other factors. It was evidenced in this study, that e-procurement leads to cost savings, thus it affects cost reduction strategies positively. Thus, e-procurement reduces inventory costs.

Keywords: E-procurement, cost reduction, service delivery, local government

1. Background of the Study

In this modern-day digitalised world, the traditional tendering approach is increasingly becoming outdated and irrelevant. Procurement operations need to be handled by digital platforms that streamlines the procurement process, thereby enhancing the speed of decision making and delivery, thus creating opportunities to generate value and save resources. The demand for paperless business processes by the government and private companies in Zimbabwe has seen the emergence and development of many commercial e-tendering.

2. Literature Review

The study comprises a theoretical framework of theories which justify the existence of the problem statement, particularly e-tender systems and the effectiveness of procurement decision systems. It then proceeds through a conceptual framework which maps out the overall investigation, to accurately review the relationship between two variables in the study. The last section of the review is that of conceptualizing the evidence already propagated on weaknesses of manual tendering, evidence that justify the adopting of e-tendering to curb the weaknesses of the former and lastly, to examine evidence on challenges in adoption of e-tendering systems in procurement decision making as well as evidence on recommendations already in suggestion.

3. What relationship exist between e-procurement and cost reduction?

According to a 2007 study by Adrienne Selko, the cost of turning requisitions into orders was reduced by 62 percent because of e-procurement. E-procurement has enhanced cost reductions and helps streamline internal processes while increasing supplier relationships, according to a 2012 study by Aberdeen. E-procurement helps you save money by avoiding duplicative purchases, taking advantage of volume discounts, and avoiding expenses related to paper-based systems (for example, the cost of stamps to mail your paperwork).

3.1. Relationship between e-procurement and service delivery

Better service delivery to residents is one of the goals of electronic governance. Such an approach can help the government streamline its procedures, connect all the stakeholders, and lower operating and administrative costs, all with the overarching goal of increasing service delivery. E-government technology can improve service delivery by introducing...
methods for citizens and governments to communicate effectively with one another. E-government has had a big impact on public administration, changing the environment in which it operates, bringing in new concepts and methods, and changing the relative weightings and relationships between its numerous systems. In a descriptive research typology, (Chukwuemeka et al 2018) and (Ibibunle et al 2019) found a strong correlation between e-government and service delivery. This is due to how much less time is wasted, there are less delays and mistakes made by employees when doing their jobs and providing services thanks to ICT.

According to (Chadwick 2016), e-government technologies promote effective governance processes, expand public access to information, and improve government accountability to the people. Government-to-Government (G2G), Government-to-Employees (G2E), Government-to-Business (G2B), and Government-to-Citizens (G2C) are the four main e-government service delivery interactions that apply to local authorities, according to (Ahmad 2019) and (Sharma 2017). These interactions are discussed below.

3.2. Government –to Government (G2G)

Refers to the electronic correspondence between government departments, offices, and agencies that is based on a government database (Sharma 2017). Solinthone and (Rumyantseva 2016) claim that G2G services occur on both a local and international level. The usage of online communication and collaboration, which enables the exchange of databases and resources, improves process efficiency. This program intends to speed up government procedures by lowering the cost of providing services and enhancing internal operations within the public sector. It helps with resource management, including how human and financial resources are used, monitored, and evaluated.

It could also be used in a way that enhances the government’s capacity to create and implement the plans and policies required to successfully carry out its obligations. For instance, a G2G connection will be possible by ICT between the KCC and the Ministry of Local Government, Public Works, and National Housing.

3.3. Government-to-Citizens (G2C)

This kind of service includes any efforts carried out by the government or its agencies that are intended for the general population. (Amuche 2019) asserts that the deployment of electronic government improves the delivery of high-quality services. Citizens are given the chance to participate in governmental processes and help shape policies that affect them through the use of ICTs; this is sometimes referred to as enhancing democracy or participation. Since it enables appropriate citizen-government participation, G2C is sometimes considered as the primary goal of e-government. On the one hand, this boosts the accessibility and availability of public services while also improving their quality. Thanks to this choice-based system, citizens can select when, from where, and how to connect with the government. Government information and services are easily accessible to the public at all times and from anywhere. In a descriptive study, (Gatobu and Muthini 2021) claim that the government-to-citizen model has had a significant and progressive impact on service delivery, leading to increased customer satisfaction. The vast majority of government services should be delivered online as a result of the implementation of e-government.

The transformation drive of public service delivery has made the most significant progress in the following areas, among others: e-procurement, e-invoicing, e-payment, e-licensing, e-archiving, e-tendering, e-taxation, e-democracy, e-submission, e-compliance, e-assessment, e-participation, e-health, and online company registration Web portals can be used by the government to disseminate information, for example by making downloadable forms available online and hosting public training courses there.

3.4. Government-to-Business (G2B)

G2B is a relationship between businesses and the government where government agencies provide services and information to a business via government portals, according to (Suri and Sushill 2019). Through G2B, businesses and governments may communicate.

Various services are transferred between government and business in G2B transactions (Solinthone and Rumyantseva 2016). As a result, the business sector is able to contribute to the development of policies and stay informed about information from the government, such as memos, policies, rules, and regulations.

This model states that some instances of interactions between the government and business include projects, purchases, taxes, bids, electronic auctions, and the delivery of business-focused services online. This project also aims to improve and streamline interactions between the government and the commercial sector. In addition to these, it also covers regulation, procurement from, general services to, and digitization.

3.5. Government-to-Employees (G2E)

The government, which is by far the largest employer, needs to engage with its employees on a daily basis just like any other enterprise. Employees and the company have a mutually beneficial relationship. One instance of G2E engagement is
the online information sharing between the KCC and its employees via websites and intranets. A G2E system deployment for improved government services, according to (Mapano and Caballero 2018), demonstrates equality and equity to employees of local government units in terms of workload distribution and the provision of rewards and recognition. Government to employee services boost efficiency, accountability, and service quality in addition to managing internal communication more effectively (Rao 2017).

4. Effectiveness of e-government systems

4.1. Access to online information and online services

ICT has a huge impact on access and equity in public services because it offers a mode of access that is substantially more affordable than the conventional face-to-face technique. As a result of this influence, ICT has been utilized for the good of the public in numerous nations. Simple tasks could be easy to do if one has internet access to government information. The public benefits from easy access to the most recent information available without having to spend a lot of time or effort getting it, and it is practical and economical for enterprises. E-government streamlines processes and makes it easier for organizations in the public sector to access government information. Therefore, the ultimate goal of e-government is to offer residents a larger choice of public services in an efficient and cost-effective manner. Online service delivery reduces the need to repeat the same action, which would otherwise waste resources and limits the faults that come with manual service supply.

The efficiency of online service delivery benefits local governments. (Aritonang 2017) asserts that e-government strengthens and improves service delivery. According to Visser and Twinomurinzi, the adoption of e-government as a tool for service delivery will undoubtedly aid in the enhancement of government services. E-government systems are used by the local government to transmit information and provide services online. Additionally, it makes it possible for everyone in the nation to have equal access to information via the internet and websites. Bryman asserts that the implementation of an e-governance system enhances service delivery. Citizens in various regions of the nation can access council services from anywhere and at any time by using an e-governance system.

4.2. Improved traditional methods of transacting and service delivery

Traditional paper-based methods make way to the use of information technology when technology is employed to supply services. The results of a study by Obi, Uzor, and Chukwurah (2020) show that e-government has facilitated service delivery, which is evident in the ways and manner in which the traditional methods have been transformed as government staff are trained to easily use electronic tools provided in order to effectively and efficiently serve the public in the best possible paradigms, causing a positive increase in the quality of service delivery. E-government refers to the use of the internet as a platform for financial transactions, communication, and service delivery with the general public, the private sector, and other governmental entities. (Obi 2020) assert that the transformation of traditional methods shows how easier service delivery has become thanks to e-government. The Internet, mobile computing, and wide area networks are some examples of these technologies (Ngonzi and Sewchurran 2019). Local governments have access to online banking for financial transactions, e-billing for calculating monthly ratepayer invoices, and the ability to email and SMS ratepayers. In addition to Ecocash, ratepayers can pay their bills online through internet banking. Customers can go to the local government’s website.

4.3. Improved relationship between local authority and citizens promoting citizen participation

A local government and its residents can engage more effectively thanks to an e-governance system, claim (Gatobu and Muthini 2021). Interactions between local governments can be facilitated and improved by the establishment of an e-government system. Employee commitment and emphasis on service quality are made possible by e-government. It offers an interactive website for information transmission and receipt, convenient service, and time-saving facilities (Akpan 2020). Because the council will be able to respond to its citizens’ needs more promptly, this can boost citizen trust and enhance relations. By offering services every day of the week instead of only during the council’s regular business hours, it also saves time. E-government, in Saugata’s opinion, helps individuals by enhancing their access to municipal data and enabling them to interact and participate. According to (Aritonang 2017), the advantages of e-government include increased citizen participation, improved accessibility, and higher-quality services. By providing easy and improved access to local government information and the ability to quickly interact and participate in the governance process, the effective implementation of e-governance systems in local governments and the sharing of information with various stakeholders results in citizen empowerment. Even in the processes used to create the budget, citizens and other business actors will be able to participate.

4.4. Greater transparency and accountability of the local government

E-government helps the local government by increasing transparency and accountability, claims (Belanger 2017). The public’s access to, understanding of, and utilization of government information are all included in the concept of
transparency. As such, transparency requires a populace that can obtain, understand, and use information provided by the government (Marufu and Manenji 2016). This may imply that public authorities must uphold their specific obligations, such as procurement procedures and tendering, in a transparent manner.

Increased transparency and accountability in local government operations and interactions with citizens and stakeholders are also facilitated by the use of e-government systems in local authority processes. A lot of transparency in a local authority’s operations to the public is provided by the sharing of information like council audited financial reports to the public online for review and processes being accessible to the public. Accountability is the capacity to outline what happened, provide an explanation for decisions and actions, and support those decisions and actions. ICT in local governments increases accountability by educating stakeholders and giving them daily access to the most recent information. Stakeholders include the federal government, municipal governments, civil society, and citizens. In order for stakeholders to confirm and concur with the council, local governments are expected to provide financial statements online, through websites, prior to publication. Since people will be aware of what the local governments are planning, this will increase effectiveness and stakeholder input and develop a sense of ownership. The use of internet-based techniques to involve citizens in the policy-making process serves as an example of government accountability and openness (Silonthone and Rumyantseva 2016).

5. Differences between manual tendering and e-tendering?

5.1. Manual Tendering

When using a manual procurement process, electronic commerce activities are not being carried out as swiftly and cheaply as anticipated. (De Boer et al 2002) hinted that the manual method is also prone to data loss, managerial override, and collusion because it depends on human contact and paperwork. Steward accountability and transparency have deteriorated as a result of manual processes, which promotes corruption. Stakeholder engagement has also very low (Ruikar 2002).

6. Which e-tender solutions have been presented to date?

E-Procurement encompasses a vast array of web-based techniques and software tools that businesses use for contract management, contract awarding, and other processes that span the entire process of purchasing the resources they need. According to (Anumba 2002), (Ruikar 2002), and (ITCBP 2003), e-tendering is included in e-procurement, suggesting that it also employs virtual operating procedures.

According to (De Boer et al. 2002), there are many different types of procurement, including e-tendering, e-reversing, e-auctioning, Web-based ERP, e-MRO (Maintenance, Repair and Operating), and e-informing. E-tendering was characterized as the web-enabled automation of a Request for Proposal (RFP)-style tender advertisement, automated bid receipt, and automated analysis, comparison, and supplier selection. E-tendering is a tool and enabler for business that entails using electronic technologies to automate and expedite an organization’s procurement operations.

6.1. Umucyo System

This is an outstanding electronic portal that houses the tender advertisement and notification of accepted tenders as part of Rwanda’s e-tendering solution. Although the system provides an online marketplace where suppliers can sign up and submit bids, it does not automatically evaluate tenders, which is important for improving openness and accountability throughout the entire procurement process. The system lacks evaluation methods for making decisions, such as e-auction system’s price ranking of bids or extra supplier advantages such critical route analysis.

6.2. GeBIZ

A system created in Singapore’s public sector to automate the government’s and its suppliers’ purchasing decisions. Although the system allows suppliers to register for bidding and selects the best offer based on the lowest price, additional quantitative and qualitative factors like the net price, time of delivery, or product quality are still not integrated. Furthermore, it does not establish a central repository where suppliers might constantly login and communicate with the state. It does not include a blacklist file or a thorough ranking or scoring system for bids.

6.3. EPIQ

EPIQ stands for Electronic Procurement Information Center (EPIC), a web-based paradigm for purchasing with improved document management connected to the application for the procurement process. All supplier data, fulfillment records, and any further supporting documentation are all recorded by the system. Registered users can also read, upload, print, and fax procurement papers via the system. In essence, the system is deficient in the integration of essential
procurement procedures, such as evaluation, ranking score, and integration with the purchasing department as the need’s initiator. It is missing features like the Five Star Suppliers and the Blacklist File (FSS).

6.4. Tender Tiger

Tender Tiger promotes a business’s goods and services, and it has a sizable, regular audience of about 10,000 buyers from the public and private sectors who use it to publish tenders and find Suppliers. As a result, the system works as a global network that links suppliers and buyers. But because the systems are not personalized, they do not include unique procurement procedures like automated evaluation and selection, blacklisting, and contract awarding. The systems also don't have automated negotiation processes.

7. Challenges to effective use of e-government systems as a way of enhancing service delivery

While there are many obstacles to using and implementing e-government initiatives in developing countries, the severity of these obstacles varies depending on the situation (Mustafa et al 2020). These issues can be grouped into the following categories:

7.1. Infrastructure

Numerous studies have found that underdeveloped countries lack the infrastructure needed to properly deploy e-government projects (Baheer et al 2020; Hanum et al 2020; Kanaan et al 2019). One of the important e-government enablers that a government needs to prioritize is ICT infrastructure. Due to problems including low fixed line telecommunications penetration and limited electricity, e-government is not widely used in the nation. According to a report by (Samboma 2019), local governments confront the following difficulties: insufficient network connectivity, inadequate IT infrastructure, unreliable access to telecoms and the internet, and low internet adoption. The process of transforming, storing, and distributing data that has significant value and is required for delivering e-government services uses the ICT infrastructure as a tool. According to (Gisemba and Iravo 2016) research, technology is by far the most important factor influencing how well e-government platforms offer services. This situation has left a service gap in e-government. Third, it can negatively impact the performance of e-government systems, making it difficult for users to receive higher quality services. Inadequate infrastructure hinders the delivery of e-government services by acting as barriers to government agencies providing e-services. Second, it reduces demand for e-government services by preventing people from accessing e-government services.

7.2. Digital divide

The “digital divide” is causing service gaps in developing nations, particularly when it comes to the utilization of e-government services. Internet users have a competitive advantage over those without it (Alabdallat, 2020). The "digital divide," which refers to the lack of or restricted access to electronic services and computer equipment among citizens due to economic factors, a lack of skills, and the location of inhabitants, is seen as a major barrier to the implementation and use of e-government (Alabdallat 2020; Chipeta 2018; Idoughi and Abdelhakim, 2018; Twizeyimana and Andersson, 2019). As a result, only those with access to the required technology and the ability to use e-services can accept and use e-government. People who lack access to ICTs and the necessary ICT skills are unable to use e-services, which prevents them from benefiting from e-government initiatives carried out in their service areas (Haider et al 2015; Twizeyimana and Andersson 2019; Verkijika and De Wet 2018).

7.3. Funding

Because "any e-government program requires funds to launch and sustain e-government projects," finance is essential for a successful e-government implementation (Apleni and Smuts 2020). With a few notable exceptions, most underdeveloped countries have difficulty funding their e-government initiatives. According to (Aritonang 2017), a lack of funding prevents the successful implementation and use of e-government. In order to build the necessary infrastructure, increase needed capacity, and offer the necessary training, financial resources are crucial and key factors. Governments want to build e-government, yet often lack the resources to make ideas a reality. This results in a funding problem (Fasheyitan 2019; Ziba and Kang 2020). As a result, most e-government initiatives receive the majority of their revenue from donations, especially in countries in Africa. When e-government implementation is dependent on donor funds, it typically leads to unsustainable funding when the funding is withdrawn, which hinders implementation progress (Khadaroo et al 2019).

7.4. Resistance and Lack of user awareness

According to several studies, resistance to change poses one of the biggest obstacles to the efficient use of e-government technologies. Some people think that an organization may be threatened by e-government. The major reason why employees are frustrated and afraid is because they believe the new system will have a detrimental impact on their ability to stay employed or to keep their position. Lack of user awareness and low ICT literacy levels substantially impair the
efficacy of e-government systems in the delivery of services by local governments. According to (Kanyemba 2017), residents' poor literacy levels continue to have a detrimental impact on how well they use e-government platforms.

(Law 2020) noted how the utilization of e-government is significantly impacted by ICT illiteracy. According to Hayat, a lack of user understanding can prevent ICT from being used effectively in the public sector. If the vast majority of intended users are unaware of these apps, nobody will utilize them, and the e-government systems become obsolete. For instance, citizens will continue to seek information and services from personnel at government offices if they are not familiar with a local authority's website.

7.5. Research Gap

The use of ICT in information processing has been shown to edify the entire procurement process, making it more effective, secure, transparent, and responsible, as noted by (the B&C Watch, 2001), (Georgieva 2017), and (Piera et al 2014). The main objective of procurement automation, according to (NSW Government, 2003), (Raventoand Zolezzi 2015), Kajewski and Weippert and other sources, is to promote efficiency, openness, and accountability (2004). Despite the many advantages of the previous manual procurement system and the outdated ideas, it is still debatable whether these systems effectively integrate all the procurement procedures necessary in the contemporary business environment. Automatic tender assessments, such as bidder ranking and scoring, blacklisting, automated selection, and contract awarding, are missing from the earlier systems. Few academics, with a primary emphasis on security considerations, were able to generalize the predicted outcomes of a modern procurement campaign. A single repository that enables genuine suppliers to gradually login and update their business profiles was absent from the bulk of earlier systems. Furthermore, existing systems lack the capacity to include negotiating procedures as well as the full supply chain of a company. The researchers want to take advantage of these shortcomings in order to make a thorough real-time proposal to problems with procurement in state institutions.

8. Conclusion

Despite the advent of e-government many years ago, local authorities continue to struggle as a result of employee reluctance to change. Limited time and finance availability, as well as resistance were obstacles to the study's completion. The ineffective use of e-government in local authorities was hampered by a lack of funding, inadequate enabling infrastructure, low ICT literacy levels, and the digital divide, among other factors.

9. Recommendations

- Computer literacy should be made a requirement for all public employees and civil servants at all levels of government, including municipal, state, and federal, by the government enacting ICT laws. The policy should also include initiatives to educate public employees about ICT and computer literacy.
- Government should provide subsidies to help local governments build e-government systems when they don’t have enough money.

Ethical considerations

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Conflict of Interest

The authors declare that they have no conflict of interest.

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